

IN THE SPECIFICATION:

Page 1, second paragraph, REPLACE as follows:

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2. Background Discussion:

Laser systems have many applications in the commercial, medical and educational environments. Laser light differs from ordinary light in three ways: it is monochromatic, coherent and directional. One of the key issues with lasers is their safety of operation. A great deal of energy is focused on a small area which may be beneficial or destructive according to the environment. For example, laser systems employed by laser pointer in an educational presentation may ~~now? Accidental~~ **cause accidental** exposure of the laser beam by the audience. Thus, the laser frequency and power output are minimized to avoid tissue damage should accidental exposure to the beam occur.

Page 6, after the second paragraph and after the third paragraph, respectively, insert the following new paragraphs:

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Figure 1A is a cross-section of Figure 1;

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Figure 2A is a cross-section of Figure 2;

Page 6, seventh paragraph that continues to page 7, REPLACE as follows:

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DESCRIPTION OF PREFERRED EMBODIMENT

In Figure 1, a laser transmitter assembly 10 comprises, in one embodiment, a main continuous wave laser 12 typically comprising a rear mirror 14 and an output lens 16 projecting a laser beam 18 to a receiver 30 (see Figure 2). A CW laser is well known in the art and described

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for example in USP 6,055,249. The laser is responsive to an input signal 19 surrounding and coaxially aligned with the laser 12 is a guard laser 20, as shown in Fig. 1A. Typically, the guard laser is a pulsed beam laser, which is well known in the art and described, for example, in USP 6,052,395. The guard laser includes a rear mirror 22 and a lens 23 surrounding the lens 16 and projecting a laser beam 24 to the receiver 30.

Page 7, third paragraph, REPLACE as follows:

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In Figure 2, a receiver assembly 30 receives a main laser beam 18 and the coaxially or surrounding pulse guard band 24 through a lens array 35, as shown in an inset included in Figure 2 Fig. 2A. A main laser receiver 32 translates the laser beam 18 into electrical signals as described, for example, in USP 5,056,111, assigned to the assignee of the present invention. Likewise, the guard beam 24 is translated by a guard band receiver 42 into an electrical signal for monitoring purposes, as will be described hereinafter in Figure 3. The lens 35 includes a central single lens 36 for receiving the laser beam 18 and an annular segmented guard band lens 38 for receiving the guard band signal 24. The lens 38 serves as a set of parallel receivers 39.

Page 9, first and second paragraph, REPLACE as follows:

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In Figure 3, the laser receiver 30 is shown, including a guard band ~~trigger~~ receiver 42 for detecting interruptions in the guard band 24 due to intervening objects. An electrical signal generated by the guard band laser receiver activates a conventional trigger circuit 43 to provide an output signal. A return laser 44, including an energy pump 45 for a laser emitter 46 is caused to be energized by the trigger signal and generates a return laser beam 48 to the transmitter 10. The return laser beam 48, when activated, indicates the guard band has been interrupted and the

main laser power input should be altered or shut down,

Turning to Figure 4, the return laser beam 48 is provided to a receiver 50 located at the transmitter station 10. The receiver 50 provides an output electrical signal 52 to a switch 53 which also receives the input signal 19 to the main laser. When the return signal is absent, the switch 53 directs the input signal directly to the laser 12. When the laser signal 48 is active and the signal 52 is generated, the switch directs the input signal 19 to a buffer 54 which stores the input signal 19 until the switch 52 returns to the normal state. When the signal 52 terminates, the switch 53 discharges the buffer to the laser 12 followed by the input signal 19. The return band signal 52 can be either a binary on-off indicator or it may be a sophisticated signal to an amplifier (not shown) to increase or decrease the energy level of the main laser beam.

Page 10, first and second paragraph, REPLACE as follows:

Returning to Figure 3, the receiver 30 also includes climatic sensors 43 44 to avoid a shutdown of the main laser by the guard band laser due to predictable and not dangerous conditions to the main laser. For example, a driving rainstorm can cause signal disruptions in the lower power or different frequency of the guard band, but not disrupt the main laser. In such case, the climatic sensor would signal the trigger circuit 43 in the receiver 41 42 not to activate the return laser 45 44 and alter the performance of the main laser. Likewise, a dust cloud that disperses the guard band beam, but not the main laser, would be detected by a climatic sensor and the trigger circuit inactivated to prevent operation of the return laser 45 44. Thus, any broad, multi-signal interruption of the guard band receiver, coincident with climatic conditions, would be considered non interfering preventing the guard band trigger receiver from altering the performance of or shutting down the main laser.

61 Besides data communication system, the guard band laser ~~40~~ 20 has application in laser surgery as shown in Figure 5. A surgeon would outline a surgical area for an operation using a guard band template. As long as the main laser alignment was within the template area, the guard band laser would be received through each segment of the segmented guard band. As soon as the laser crossed over the guard band template, reception of the guard band would be disrupted on one or more of the segments and the main surgical laser would be interrupted.
